

**Gold King Mine Spill
Health and Safety
Plan for EPA Region 6**

**August 13, 2015
Version 1.1**

**For Federal Employees and Federally Deployed
Assets,
Including Contractors**

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US EPA

Health and Safety Plan (HASP) for the Gold King Mine Spill (R6)

This document outlines the basic safety & health requirements for federal workers and contractors involved in response and recovery operations related to The Gold king Mine Spill in Region six.

This HASP provides overarching requirements and sets a baseline for worker safety & health protection. Individual agencies and contractors are responsible for developing HASPs specific to their operation for the protection of their own employees.

This HASP was developed using basic risk management principles to provide for the greatest level of protection for the greatest number of workers at risk. Specific operations or locations that contain actual or potential hazards not considered in the basic plan may require greater levels of protection. It is incumbent on each agency or contractor to have a competent person¹ conduct a job hazard analysis (JHA) prior to commencing work.

This HASP follows the basic principles outlined in OSHA's Safety & Health Program Management Voluntary Guidelines, which are as follows:

- Management commitment and employee involvement
- Worksite analysis
- Hazard prevention and control
- Safety & health training

This HASP also addresses the tasks identified in the Worker Safety and Health Support Annex (WSH Annex) to the National Response Plan (NRP).

Agency and Contractor Safety & Health Plans

Each employer (agency and contractor) is responsible for the safety and health of its employees. Each agency and contractor must establish a safety & health plan commensurate with its operations and consistent with the principles outlined in this HASP. Individual plans will be submitted to the OSHA representative and appended to this HASP. Each agency and contractor will designate a safety & health manager responsible for the implementation of the HASP.

Safety & Health Program Management

Overall coordination of the HASP will be handled by representatives of OSHA as the Coordinating Agency for the WSH Annex. OSHA will work together with the Cooperating Agencies outlined in the WSH Annex to address overall safety and health management related to the incident. Individual agencies and contractors are responsible for implementing the necessary protections for their employees

¹OSHA defines a competent person as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. (29 CFR 1926.32(f), emphasis added)

consistent with the HASP. Employers shall establish policies for the enforcement of their safety and health rules.

Joint safety and health meetings will be held with agencies and contractors.

These meetings will address ongoing as well as new and emerging safety and health issues. Incidents (including near-misses) will be reviewed, and trends will be analyzed. Sampling results will be shared among all agencies and contractors.

Information dissemination will be coordinated with the Joint Information Center. Attention should be paid so that worker safety and health messages are not confused with information for the general public, and vice versa.

Recordkeeping

Each employer is responsible for maintaining logs of all recordable injuries and illnesses (OSHA Form 300 or equivalent). Each recordable case shall be logged within five working days. A supplemental record shall be maintained for each case. This information, together with total job hours worked, will be provided to OSHA on a weekly basis for the development of trend analyses and calculation of DART (days away/restricted time) rates.

Incidents that have statutory reporting requirements shall be reported in conformance with those statutes. This includes, but is not limited to:

- Accidents involving worker fatalities or the hospitalization of three or more workers must be reported to OSHA within eight hours (1-800-321-6742).
- Spills or releases of hazardous materials or oil in excess of the reportable quantity must be reported to the National Response Center (1-800-424-8802).

Each employer is responsible for maintaining employee exposure records in accordance with 29 CFR 1910.1020.

Worker Rights and Responsibilities

It is the responsibility of the employer (agency or contractor) to provide a safe and healthful workplace for their workers. It is the responsibility of employees to comply with established work rules and to use assigned personal protective equipment.

Employees who identify hazards shall immediately notify their supervisor. Employees may refuse to perform tasks that create an imminent danger. Employees have a right to complain about unsafe or unhealthful working conditions to OSHA or other agencies with jurisdiction. Employees who file complaints will not be subject to any discrimination as a result of them exercising their rights.

All workers must adhere to the following work rules:

- Follow their employers safety & health policies at all times.
- Follow supervisors instructions and adhere to the chain of command.
- Follow personnel accountability instructions; check-in and check-out.
- Obtain vaccinations in conformance with the employers medical direction.

- Promptly report all injuries, accidents, and near misses. Seek medical attention as needed.
- Report all unsafe conditions. Do not perform tasks until proper safety & health controls have been put into place. Employees may refuse to perform tasks that expose them to an imminent danger.
- Wear all personal protective equipment (PPE) needed for the task.
- Maintain constant awareness of your surroundings.

Situation Assessment

On August 5, 2015, an EPA team working to investigate and address contamination at the Gold King Mine in San Juan County, Colorado, unexpectedly triggered a large release of mine waste water into the upper portions of Cement Creek. Initial estimates are that the release contained approximately one million gallons of water that was held behind unconsolidated debris near an abandoned mine portal. There were several workers at the site at the time of the breach, all were unharmed. Although the incident occurred in region 8 the plume has traveled downstream into Region 6.

8/8/15 Update:

- The first two days after the incident, the plume was moving at approximately 4 miles per hour. According to the EPA's ASPECT (Airborne Spectral Photometric Environmental Collection Technology) flyover, as of the morning of Aug 8th, the plume had reached the confluence of the San Juan River. As of 4:00 pm this afternoon, the plume had roughly reached Kirtland, New Mexico. The plume has been visually diluted and the leading edge of it is far less defined. The water is reported to be muddy with an orange tinge rather than solid orange.
- Sampling data from Cement Creek and the Animas River near Silverton from Aug. 5th and 6th show pH and metals concentrations are decreasing to pre-event conditions. We continue to monitor river conditions at multiple locations to detect trends. Rain events and variations in stream flows can cause the pH and metals concentrations to rise and fall.
- The data shows that pH (acidity) levels and dissolved metals in the Cement Creek and the upper portions of the Animas River spiked in the surface water at locations impacted by the contaminant plume. The data shows in the upstream locations the resident time of the plume in any one location was not long lasting. The trend downstream, in the Animas and San Juan Rivers, is expected to be similar or better than upstream, as the contaminant plume passes.
- Colorado Parks and Wildlife has indicated they are optimistic that the effects of the spill on terrestrial wildlife will be minimal.
- The water in Cement Creek and the Animas River in Silverton is clearing. The adit is still discharging approximately 500 gallons per minute and the trend is that flow is decreasing. The discharge is being diverted into the newly constructed ponds and treated before it enters Cement Creek. The treatment appears to be effective.

Job Hazard Analysis (JHA)

Each agency and contractor shall prepare JHAs for their operations. The JHA is typically developed and prepared by a team of personnel familiar with the specific task or operation. Generally accepted principles of risk management and hazard control shall be applied. The JHA will focus on risks to worker safety and health. Each identified hazard (actual or potential) will be addressed with

appropriate mitigation strategies (i.e., engineering controls, work practice controls, or personal protective equipment). JHAs should serve as stand-alone documents to serve as a reference for individual workers and supervisors performing the task or operation. The hazard control measures must be specific, clear, concise, and practical. Any required permits shall be attached to the JHA. The employer shall keep copies of all JHAs for review by occupational safety & health professionals and by agencies having jurisdiction.

Exposure Monitoring

Exposure monitoring shall be performed based on a health risk assessment conducted by a qualified person³. Personal monitoring should be the primary means of assessing worker exposure. In many cases direct reading or grab sampling can be used. In all cases documentation must clearly depict what the sampling represents. If there is any doubt, conduct personal monitoring. It is important to remember the importance of sampling data shared amongst the federal family. Additionally, when samples are taken that represent an individual's exposure, contact information for that individual should be obtained to ensure they can be notified of results and recommendations for follow-up actions.

Consideration should be given to contaminants likely to be present in the circumstances encountered. When specific chemicals are known or suspected to be present in certain locations, the sampling protocol should address them. Screening may be conducted to determine if contaminants are present. Full-shift or short-term exposure personal monitoring of employees shall be conducted to determine actual occupational exposure levels.

It is important not to confuse occupational exposure limits with standards established for the protection of the public or the environment. Sampling strategy, risk communication, and public/media information should take this difference into account.

³OSHA defines a qualified person as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project. (29 CFR 1926.32(m))

In addition to sampling performed by various agencies during their response activities, each employer (agency or contractor) shall conduct exposure monitoring (personal sampling or monitoring) as follows:

- When required by a specific standard (i.e., OSHA standards for lead, asbestos, benzene, etc.)
- When worker exposure is reasonably anticipated to be greater than the OSHA (or other applicable agency) action level for that substance (or 50% of the Permissible ⁵Exposure Limit (PEL) or Threshold Limit Value (TLV) if no action level is specified)
- When necessary to assess and evaluate worker exposure, or to resolve worker complaints or concerns
- When necessary to verify the adequacy of the hazard control methods implemented

Sampling results will be provided to affected employees, the Regional SHEMP and shared among the cooperating agencies and contractors via the data collection mechanism developed.

Hazard Control

Hazards should be addressed according to the hierarchy of controls, listed below in descending order of preference:

- **Elimination or substitution:** Not a viable option for most hazards created by a natural disaster, although it may be considered for introduced hazards, such as for materials or processes brought in during the recovery operation.
- **Engineering controls:** Physical steps to reduce or eliminate exposure to a hazard, such as installation of a guard on a machine.
- **Work-practice or administrative controls:** Work rules or procedures that lessen the probability of an accident.
- **Personal protective equipment (PPE):** Provision of protective equipment and garments is the least desirable method of protection, but in many instances it may be the only option possible.

Personal Protective Equipment (PPE)

The use of PPE must be properly assessed. Equipment must be properly selected for the hazard, and properly fitted for the employee. Employees must be trained in the equipments uses and limitations, as well as proper donning and doffing techniques. Equipment must be inspected before each use and repaired or replaced as needed. PPE shall be maintained and stored in a clean and sanitary manner. Employers shall maintain adequate supplies for timely replacement of lost, worn, or broken PPE.

⁵PELs are established by OSHA. TLVs are published by the American Conference of Governmental Industrial Hygienists (ACGIH).

The following PPE may be needed during recovery operations:

- **Foot Protection:** Steel toe / heavy duty work shoes or boots, with consideration given to water protection in flooded areas
- **Eye & face protection:** Safety glasses, goggles, full face shields, or other suitable protection
- **Head protection:** Hard hat or helmet, in areas where overhead falling object or electrical hazards exist
- **Appropriate work clothing:** Providing protection from cuts & abrasions, irritation, and sunlight. Consideration should be given to heat stress issues (i.e., light colored, loose-fitting garments).
- **Hand protection:** Gloves suitable for the tasks being performed (balancing dexterity versus protection). Considerations include biological hazards (bloodborne pathogens), chemical hazards, and physical hazards (abrasion, cuts & punctures, heat).
- **Hearing protection:** Earplugs, earmuffs, or a combination, should be used when employees are exposed to levels of noise greater than 85dBA.

Reference OSHA 29 CFR 1910.95.

- High visibility garments (ie. Reflective safety vests): While such garments may make a worker more conspicuous to approaching drivers, they do not offer any actual protection from traffic. Such garments must be used in conjunction with other traffic safety means.
- Respiratory protection: Where nuisance levels of dust or mold are present, use of an N95 filtering face piece is recommended. Charcoal-impregnated masks may provide additional comfort against nuisance odors. When airborne contaminants exceed, or may reasonably be expected to exceed, exposure levels, the use of respiratory protection shall be required. Where contaminants such as lead, asbestos, or silica, are present, N100 or P100 air purifying respirators shall be used. Where other contaminants exist, specific filters or cartridges appropriate to the contaminant shall be used; combination cartridges and filters shall be used when multiple contaminants are present. Surgical masks and dust masks that are not NIOSH approved are not considered suitable respiratory protective devices. The use of respirators requires compliance with OSHA 29 CFR 1910.134, including the development of a Respiratory Protection Program, medical clearance, employee training, and fit testing. Voluntary use of respirators must conform to Appendix D of 29 CFR 1910.134. The use of self-contained breathing apparatus (SCBA) or other supplied-air respirators is beyond the scope of this HASP. The employers Respiratory Program Administrator must address such uses individually.
- Protection from drowning: Employees working on, over, or near water that Presents a drowning hazard shall wear appropriate personal flotation devices. Additional protections, such as a life saving skiff and a ring buoy shall be provided in accordance with 29 CFR 1926.106.

Specific circumstances, such as structural firefighting, confined-space entry, and response to hazardous materials releases, require specific PPE ensembles and procedures that are beyond the scope of this HASP. Operations such as cutting, burning, or welding also require the competent person conduct individual JHAs and assign appropriate PPE in conformance with procedures outlined in their HASP. Agencies or contractors addressing such hazards must comply with applicable standards (i.e., OSHA, NFPA, etc.).

Training

All agency and contractor personnel engaged in response operations must be trained to recognize and avoid hazards. This training is composed of several elements:

- General training for disaster site workers
- Site-specific training
- Task specific training, including any mandated training requirements
- Pre-deployment and pre-job briefings

Site-specific training includes an overview of conditions specific to the locales where the employee will be deployed.

Task-specific training includes items such as hazard communication, PPE, use of tools, safety at elevations, etc. Training that is mandated by various agencies, such as OSHA, EPA, USCG, DOT, etc., shall be provided in accordance with those agencies guidelines.

Pre-deployment and pre-job briefings are conducted on a daily basis by the workers immediate supervisor to cover the days work plan.

Employers (agencies and contractors) shall maintain records of employee training available for inspection by agencies having jurisdiction. Training records include documentation such as, but not limited to, training certificates, attendance rosters, course curriculum matrices, etc. Employers shall provide competent and qualified persons as required by various standards.

Training activities will be coordinated with the National Institute of Environmental Health Sciences (NIEHS), OSHAs Office of Training and Education, and OSHAs Ed Centers.

General Safety & Health Provisions

Incident management and responder safety

Response operations should follow the principles of the incident command system (NIMS-ICS). The following criteria should be addressed:

- Unity of command
- Span of control
- Common terminology and plain language
- Personnel accountability
- Management by objective (planning cycle, incident action plans)

In addition to the safety & health manager responsible for administering their HASP, each agency and contractor shall designate a safety officer to oversee field operations.

One or more assistant safety officers may be appointed as needed to cover large geographic areas, multiple shifts, or if specialty knowledge is needed for specific tasks. Agencies and contractors may coordinate the appointment of safety officers to maximize the use of safety and health resources.

Establish operational zones as needed:

- Hot zone or exclusion zone
- Warm zone or contamination reduction zone
- Cold zone or support zone

Establish sufficient perimeter security and access control to keep unauthorized persons out of hazardous areas.

Provide medical care and rehabilitation as needed to support the responders, following the guidance contained in this HASP.

Chemical hazard communication

Each agency and contractor will establish a hazard communication program in conformance with 29 CFR 1910.1200. Material safety data sheets (MSDS) will be maintained by the individual employers, and will be shared upon request with employees, other agencies, and other contractors. Employees shall be informed of the existence and location of MSDSs. Containers of chemicals shall be labeled with the contents, hazards, and target organs.

Hazardous materials spills, leaks, and releases (including oil)

The release, spill, or leak of any hazardous material (including oil) shall be reported to US EPA and/or USCG for appropriate handling. The cleanup of hazardous materials releases will be handled by properly trained and protected individuals in accordance with the requirements of 29 CFR 1910.120.

In case of unanticipated discoveries, such as tanks, drums, or cylinders of hazardous materials, or unexploded ordinance and/or ammunition, all work shall cease in the vicinity, the area shall be cordoned off, and appropriate public safety agencies shall be summoned.

Confined Space Entry

Work involving confined space entry shall conform to 29 CFR 1910.146. Any agency or contractor that will be performing confined space entry shall develop a specific plan and conduct a JHA prior to commencing work. Plans shall include space evaluation and established acceptable entry conditions; a permit system; training for entrants, attendants, and supervisors; atmospheric monitoring; and rescue / emergency services.

Medical services and first aid

First aid services and provisions for medical care shall be made available by the employers (agencies and contractors) for every employee. Employers shall evaluate work areas and make arrangements for swift access to emergency medical care. It should be noted that in some affected areas public hospitals and emergency rooms may not be open or may have degraded levels of service. Additionally, many areas do not currently have reliable 911 services or timely emergency service response. Where the availability of emergency services cannot be assured, employers shall make alternate arrangements to include contracting medical care providers (including on-site trailers if necessary), coordinating with other agencies that have assets available, or contracting with private ambulance services.

Each agency and contractor shall develop and maintain a list of current emergency contact numbers, including police, fire, and EMS, as well as designated employer representatives to be notified in case of emergency.

Quick drenching shower facilities and eye washes (providing clean water) shall be provided as needed for workers exposed to injurious or corrosive chemicals.

Where employees may need to be decontaminated following exposure to chemical or biological hazards, the employer (agency or contractor) shall make arrangement for suitable facilities, including a reliable source of clean water. If employees need to be transported by emergency medical services due to life-saving medical priorities prior to being fully decontaminated, the ambulance crew and receiving hospital personnel shall be informed of the patient's status and likely contaminants. If time permits, at least outer garments should be

removed and gross decontamination performed. The patient may also be wrapped in a suitable barrier, if not medically contraindicated.

Psychological First Aid

Workers exposed to a traumatic incident may suffer psychological stress. It is important to recognize that this reaction is normal, and such feelings should be addressed and not ignored. Workers should be encouraged to talk about their feelings, maintain normal eating and sleeping habits, try to exercise and eat well balanced meals, drink plenty of non-caffeinated non-alcoholic beverages, and take breaks when possible. Workers should communicate with friends, family, and loved ones, and also reach out to community-or faith-based organizations. Employers (agencies and contractors) should make available counseling and encourage workers to make use of it.

Alcohol and drug abuse

Persons who are under the influence of alcohol, certain prescription medications, or illicit drugs may present a safety hazard to themselves and others. Employers (agencies and contractors) shall establish policies governing alcohol and drug abuse. Operations that are under the jurisdiction of the Department of Transportation shall also comply with their regulations regarding alcohol and drugs.

Work-rest regimen, fatigue

Extended work shifts, unusual work hours, and lack of sleep all contribute to fatigue. Fatigue increases the likelihood of inattentiveness, which may cause accidents. Fatigue also contributes to stress. Employers (agencies and contractors) should take fatigue issues into account when scheduling work shifts.

A work-rest regimen is also an important element in the prevention of heat stress.

Heat stress⁶

Excessive heat presents a serious hazard for employees, especially when coupled with the high humidity. When the body is unable to cool it's self by sweating, several heat-induced illnesses such as heat stress or heat exhaustion and the more severe heat stroke can occur, and can result in death. High temperature and humidity, direct sun or heat, limited air movement, physical exertion, poor physical condition, some medicines, and inadequate tolerance for hot environments are all factors that can lead to heat stress.

To help prevent heat stress, workers and supervisors should be familiar with the signs and symptoms of heat-related illnesses, and should be monitored for same. Direct sun or other heat sources should be blocked, if possible. Cooling fans, air conditioning, or misting should be provided when possible. Regular rest periods should be permitted. Workers should drink about one cup of water every 15 minutes; avoid alcohol, caffeinated drinks, or heavy meals. Workers should wear lightweight, light-colored, loose-fitting clothes.

If a worker is exhibiting the signs or symptoms of heat-related illnesses, summon emergency medical services at once. While waiting for help to arrive,

move the worker to a cool shaded area. Loosen or remove heavy clothing. Provide cool drinking water. Fan and mist the worker with water.

Animal and plant hazards

Flora and fauna may present hazards to workers. Native wildlife (both animals and plants) may be poisonous or venomous, or may otherwise injure workers. To help avoid insect and snake bites, observe areas before beginning work to locate nests or creatures. Try to avoid working in standing water. Use caution before reaching into voids or other spaces. If possible, map areas of likely problem areas and warn workers. Workers should use insect repellent containing DEET; repellent should be reapplied according to the manufacturers instructions. Workers should be encouraged to wear long pants and sleeves, if practical (balanced with heat stress concerns). Identify persons with allergies and either administratively control exposure or coordinate with medical authorities for first aid supplies (including auto-injector medications, if indicated). Educate workers on the identification of poisonous plants and dangerous animals and steps to take to lessen this hazard. Provide vector control, where feasible.

⁶Reference: OSHA Publication 3154, Heat Stress Quick Card.

Sanitation

Employers (agencies and contractors) shall provide or arrange for adequate facilities for their workers (hand washing and restrooms). The exercise of good personal hygiene can help minimize worker exposure to health hazards and contaminants.

- Workers should wash their hands before eating, drinking, or smoking, and both before and after using the toilet.
- Appropriate vector control measures should be put in place. Workers should utilize insect repellent containing DEET.
- Workers should avoid creating dust, work upwind whenever possible, and use appropriate PPE per their employers JHAs. Replace PPE that is worn or torn.
- Workers should seek medical attention or self-treat any minor wounds, as appropriate.
- Workers should be current on all recommended vaccinations, per their employers medical direction.
- Workers should avoid eating, drinking, or smoking in areas containing debris, floodwaters, or sludge remaining in previously flooded areas.
- Only drink water from sources that are proven to be potable. Avoid consuming food or beverages that were exposed to flood waters or perishables that may have spoiled.
- Exercise good housekeeping. Minimize accumulations of trash and keep garbage in closed containers. Proper housekeeping also reduces potential slip/trip/fall hazards.
- Temporary labor camps should conform to the requirements in 29 CFR 1910.142.

Heavy/construction equipment

A competent person shall inspect all equipment prior to use. Deficiencies shall be corrected before use, or the equipment must be tagged out of service.

Operators shall have the experience, skills, and knowledge to safely operate the equipment assigned. While operating the equipment, operators shall not engage in any activities that may distract them from the task at hand. Equipment used for demolition shall be equipped with a demolition cage, wire screen, or equivalent structure to prevent materials or debris from breaking cab windows. Operable audible reverse indicators (i.e., backup alarms) shall be installed on all equipment. Spotters shall be used whenever necessary based on site conditions and visibility from the cab. Any swing radius that presents a hazard to employees shall be barricaded or otherwise protected.

Ground personnel and pedestrians shall maintain a safe distance from heavy equipment, taking care to stay out of blind spots. Personnel shall wear high visibility garments, and should make eye contact with the operator before approaching.

Heavy equipment that is worked long shifts for an extended period of time may suffer breakdowns. Breakdowns and machine failures present a safety hazard as well as slowing the overall pace of work. Sufficient downtime for preventive maintenance needs to be considered during the planning cycle. Also refer to specific sections of this HASP addressing cranes and rigging.

Contractor staging areas

Contractors shall plan for and establish staging areas consistent with their assigned work. Staging areas shall provide sufficient room for the parking of equipment and vehicles. Office space, sanitation facilities, medical and first aid care, storage for PPE and other safety equipment, and other relevant factors shall all be taken into account. To the extent possible, the staging area should be laid out with traffic flow and pedestrian safety in mind. Staging areas should be provided with adequate lighting and security, and be graded and constructed for local weather conditions. If possible, staging areas should be located to minimize travel time to the work location.

Worker transportation and parking

Worker transportation to the jobsite and around the jobsite present safety hazards that can be reduced through proper planning.

Workers who drive in the course of their duties shall possess valid licenses appropriate for the vehicles they are driving (including a commercial drivers license, if required). Drivers shall comply with all applicable traffic safety regulations. Employers shall ensure compliance with state laws governing the use of seat belts. Vehicles should be equipped with a sufficient number of seats for each passenger.

Extra care should be exercised when driving on roads that may have been damaged. If possible, avoid driving into standing water due to the potential for unseen hazards. Allow extra time when traveling and drive defensively.

Sufficient parking areas should be arranged for workers in a location convenient to where they report for work. Parking areas shall be adequately lit and graded.

Fall protection and falling object protection

Employees shall be protected from falls greater than six feet to a lower level. Fall protection such as guardrails, coverings over floor holes, or personal fall arrest systems shall be installed conforming to 29 CFR 1926 Subpart M.

A qualified person must determine if the walking / working surface is adequate to support the weight of workers, tools, and materials.

Use of scaffolds shall conform to 29 CFR 1926 Subpart L. Use of ladders shall conform to 29 CFR 1926 Subpart X. The use of aerial lifts and scissor lifts shall conform to the applicable portions of 29 CFR 1926 as well as relevant ANSI standards.

Workers shall pay extra attention to the walking / working surfaces to minimize slip/trip/fall hazards. Extra care should be exercised when stepping into areas that are unstable or uneven, such as a debris field, or where the surface cannot be visualized (i.e., if covered by water).

Objects that may dislodge and fall, especially broken glass, present a serious hazard to employees. Whenever possible, such objects or glass should be removed before employees work beneath them. If objects cannot be removed, then controls such as debris netting, sidewalk sheds, canopies, or catch platforms shall be installed.

Note: Specific applications, such as Blue Tarping, are addressed in a separate section of this HASP.

Demolition

In addition to the requirements for heavy equipment use, demolition activities shall conform to 29 CFR 1926 Subpart T. Employees shall not enter seriously damaged buildings or structures until a qualified person determines their safety and integrity. A survey shall be conducted prior to the commencement of demolition. All utilities shall be disconnected.

Material handling and storage

The operation of powered industrial trucks shall conform to 29 CFR 1910.178, including provisions for operator training. Material storage shall conform to 29 CFR 1926.250.

Electrical safety

All electrical equipment, including generators, extension cords, lighting, and power tools, shall meet applicable OSHA, NFPA, and NEC standards. Ground fault circuit interrupters (GFCI) shall be installed on all 15A and 20A temporary wiring circuits.

Be aware of carbon monoxide (CO) build-up if generators are used in areas with limited ventilation.

Fire safety

Adequate fire extinguishers shall be provided at work sites and/or on work vehicles. JHAs should take into account the potential for fire and the need for a fire prevention plan. Consideration should be given to impediments such as limited public water supply (i.e., hydrants out of service, low water pressure), lack of 911 service, and delays in fire department response time.

When hot work is performed, a fire watch shall be provided. Hot work shall not be performed where hazardous atmospheres exist.

Safe storage areas for flammable and combustible liquids shall be provided. Such areas shall be clearly marked, and not located in a depression or low area.

Ignition sources shall be at least 25 feet away from such areas; smoking shall be prohibited. Containers shall be bonded and grounded during dispensing.

Smoking shall be prohibited in areas where there is a fire hazard, as well as where smoking may cause ingestion of contaminants.

Hand and power tools

Tools shall be inspected prior to use. Damaged or defective tools shall be repaired or taken out of service. Tools should only be used for their intended purpose.

Be aware of carbon monoxide (CO) build-up if internal combustion engines are used in areas with limited ventilation.

Illumination

Adequate lighting shall be provided. Refer to 29 CFR 1926 Subpart C for guidance.

Specific Safety & Health Protections

The following sections outline basic safety & health hazards and suggested protective measures specific to a range of identified tasks and operations applicable to the most common recovery tasks. These are intended to form the baseline for safety & health protection and should be consulted when conducting a JHA. These tasks are not intended to be all-inclusive. They serve as a reference for agencies and contractors conducting their own JHAs. Non-routine tasks require specific JHAs. Referenced and other applicable standards should be consulted for all relevant details. In case of doubt, consult with a qualified safety and health professional.

Each task or operation is addressed as follows:

- Brief overview of task or operation
- Synopsis of primary safety and health hazards
- Engineering controls, work practices or administrative controls, personal protective equipment (PPE)

Task: Water/sewer distribution/treatment Sampling

Description:	The sampling activities in support of restoration of water and sewer treatment facilities
Hazards:	Entry into confined spaces, falls, electrical, struck by, heavy equipment usage exposure to chemicals, caustics, vapors, and gases as well as biologically contaminated water and surfaces, power tools, excavation/trenching hazards, heat stress bites/stings, mammal/snake, and vehicular traffic
Controls:	Extra care must be taken to use proper personal hygiene practices including; hand washing/sanitizing, equipment decontamination, and proper use of appropriate personal protective equipment. Proper ventilation and a confined space permit system is required prior to entering confined spaces in accordance with 29 CFR 1910.146. Use fall protection systems

when working from heights. Unless the electrical power lines have been deenergized and visibly grounded, maintain proper distance from electrical power lines (at least 10 feet) and/or provide insulating barriers. Appropriate respiratory protection must be used as needed. Use of a ground fault circuit interrupter protected source or use of an assured equipment grounding program. PPE to include, hard hats, gloves, protective clothing, safety work boots. Operate cranes in accordance with 29 CFR 1926.550. Proper rigging of loads in accordance with 29 CFR 1926.251. Properly operate and inspect heavy equipment in accordance with 29 CFR 1926.600. Each employee in a trench shall be protected from a cave-in by an adequate protective system in accordance with 29 CFR 1926.651 and 1926.652. Plan for traffic safety and implement appropriate work zone safety procedures found in the Manual on Uniform Traffic Control Devices (MUTCD). Appropriate inoculations against Hepatitis A and tetanus.

Task: Temporary Labor Camps

Description: Set up temporary labor camps for responders. This is basically a construction project. It includes erecting large tents (the size of those normally seen for a large circus), driving forklift trucks, putting down wood floors, placing portable stoves, sinks, generators, showers, toilets, stringing temporary wiring and lights, setting up tables, and cots for communal living.

Hazards: Struck-by, electrical, carbon monoxide, slips, trips, lifting heavy loads, awkward postures, heat stress

Controls: Forklift truck training. GFCI protection for electrical circuits, proper installation and placement of generators, use of electrically safe hand tools, and heavy-duty extension cords. Good housekeeping practices including frequent cleaning of floors. Training on lifting techniques.

Task: Sanitation

Description: Provide recovery workers adequate drinking water, appropriate sanitation facilities or means of access to such facilities for bodily functions and washing facilities for necessary personal sanitation.

Hazard: Workers exposed to dehydration from working in high heat and biological infection from inadequate toilet/washing facilities.

Controls: Supply appropriate supply of potable (drinking) water and individual means of dispensing the water such as a supply of paper cups, and/or provide bottled water. Provide portable toilets equipped with washing facilities and supplies of soap and towels. Clean as necessary to maintain in a sanitary condition.

Task: MOBILIZATION/DEMOBOLIZATION (DRIVING)

Description: This task hazard analysis refers the process of mobilizing and demobilizing personnel and equipment to complete response objectives including reconnaissance around the site .

Hazards: The primary hazard involves driving unfamiliar/large vehicles to destinations in areas that are unfamiliar to the driver. Due to the significance of the incident, many drivers may work extended hours which increases the risk of an accident. Workers will drive into areas with unknown debris, muddy/slick roads, and various other hazards. Other hazards include: Electrical Hazards, Driving Hazards, Illumination (travel pre-dawn/post dusk) Parking (tight quarters), Inclement Weather, Stress/Fatigue, Heat/Cold Stress Structural Instability (buildings/roads), Fire Explosions

Controls: Buddy System, Current Driver's License, First aid/BBP kit, Fire extinguisher, Cell phone, cell phone booster, Power Inverter, Radio, Spare tire and fix-a-flat, Jumper cables, Water (minimum 1 bottle per hour planned to work), GPS, Map, Emergency Flares, Flash Light, spare batteries, , nonperishable foods, such as granola bars and/or MREs, rain gear. In cold climates a blanket per person, matches or lighters and towels, extra socks, and gloves. Conduct a thorough check of vehicle prior to departure.

Task: Aircraft Operations

Description: This task hazard analysis refers to the use of aircraft during the process of an emergency response to a disaster. This applies primarily to EPA and Contractor personnel as passengers in fixed wing and rotorcraft type aircraft during flight operations over both land and water.

Hazards: Aviation fuel, Equipment hazards (spinning rotors and/or propellers, airport and/or street traffic, etc.), Long working hours, Long travel distances (times), Illumination (travel pre-dawn and post dusk), Parking (tight quarters)

Controls: Get proper sleep prior to traveling. If you are tired, postpone travel, or travel with a companion. Enroute to airport, no travel through unsecured areas will be permitted without a buddy system. Check State Police website prior to travel to review road closures and hazards. Inspect personal vehicles PRIOR to travel to airport to verify they are in good operating condition (complete vehicle inspection checklist). Always let supervisor know when and where you are traveling. Always carry communications (cell phone or radio, and check in when possible). When in or near aircraft, follow directions of Pilot In Command at all times. Never exit aircraft while rotors or propellers are moving.

HEALTH AND SAFETY PLAN

GENERAL INFORMATION	Company/Facility Name or Site Location:	Gold King Mine Spill (R6)		
	Description of Activities:	reconsance, sampling, mobilization		
	Date(s):	8-9-15		
	Personnel:	See ICS form 204 and IAP		
EMERGENCY INFORMATION	Non-911 Emergency Phone: (Direct to police, fire, and hospital)	Police 505-599-1070 Fire 505-599-1379		
	Site Specific Emergency Responder Procedures:	None		
	Medical Facilities: (Name & Address)	Basin Cordinated Health Care 210 N Orchard Ave 505-324-8269		
	Directions to Local Medical Facilities:	(see attached map with directions)		
EPA RESOURCES		Name	Work Phone	Cell
	R6 SHEMP Manager:	Kendra Gomez	(214) 665-7225	(214) 205-7643
	Workmen's Comp Manager:	Yolanda Nixon	(214) 665-2738	(214) 402-0230
	Supervisor:	Kenneth Shewmake (Safety Officer)	214-665-3198	972-322-4333
HAZARDS / SAFETY	Applicable JHA: (attached)	SUPERFUND Field Sampling		
	Check Potential Hazards:			
	<input type="checkbox"/> Radiation	<input checked="" type="checkbox"/> Toxics	<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Corrosives
	<input type="checkbox"/> O ₂ Deficiency	<input type="checkbox"/> Noise	<input checked="" type="checkbox"/> Physical	<input checked="" type="checkbox"/> Biological
	<input type="checkbox"/> Dusts	<input checked="" type="checkbox"/> Heat/Cold Stress	<input type="checkbox"/> Other:	
	Hazard Description:	Relaease of mine waste into surface water.		
	Safety Monitoring Equipment Required: (list equipment)	Level D, safety glasses, steel toe boots, hearing protection, hard hat, safety vest.		
	Prevention:	All site safety procedures shall be followed. Areas with potential exposure to chemical, physical and explosive hazards shall be avoided if at all possible. Team members shall not enter confined spaces or areas with potential unexploded ordinance. In case of emergency, all inspection staff shall exit and allow site personnel to contain and manage incident.		
Safety Supplies:	Reference attached JHA			

Basin Coordinated Health Care

210 N Orchard Ave, Farmington, NM 87401

(505) 324-8269

